the condition of education 2000

INDICATOR 16

High Performance in Mathematics and Science

The indicator and corresponding tables are taken directly from *The Condition of Education 2000*. Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 2000*, visit the NCES web site (http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000062) or contact ED PUBs at 1-877-4ED-PUBS.

Suggested Citation:
U.S. Department of Education, National Center for Education Statistics, *The Condition of Education 2000*, NCES 2000-062, Washington, DC: U.S. Government Printing Office, 2000.

NATIONAL CENTER FOR EDUCATION STATISTICS

U.S. Department of Education
Office of Educational Research and Improvement

Academic Outcomes

High Performance in Mathematics and Science

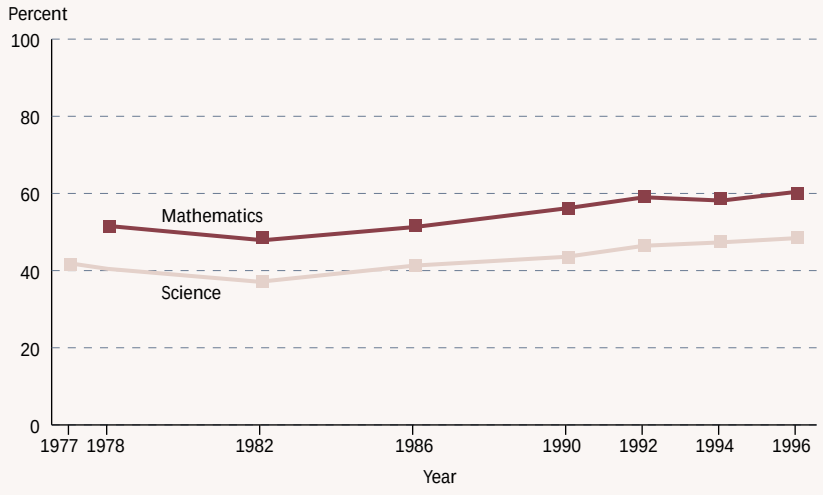
The percentage of 17-year-old students scoring at or above 300 on the National Assessment of Educational Progress (NAEP) in mathematics and science has increased over the past 20 years.

Scores of 300 or higher on NAEP long-term trend assessments (see *Supplemental Note 6*) indicate high performance in a subject area and demonstrate a student's ability to think critically and apply reasoning, analytical, and problem-solving skills. A score of 300 on the mathematics assessment indicates both the ability to perform moderately advanced numeric procedures and logical reasoning, and a developing understanding of number systems. For science, a score of 300 represents the ability to analyze scientific procedures and data and a growing understanding of principles from the physical sciences.

The long-term trend version of NAEP offers the ability to measure change over time. These data show that, for both mathematics and science, a greater percentage of 17-year-old students scored at or above 300 in 1996 than in 1978 (for mathematics) or 1977 (for science). For mathematics, the percentage of students scoring at or above 300 remained stable from 1978 to 1982, was greater in 1990 than in 1982, and remained stable again between 1990 and 1996. For science, the percentage of students scoring at 300 or above decreased between 1977 and 1982, but then increased between 1982 and 1996.

Trends in high mathematics performance were slightly different for females than males. In 1978, males were slightly more likely than females to score at or above 300 on the mathematics assessments; in 1996, males and females were as likely to score at or above 300. No such change occurred for the science assessments; males were more likely than females to score at or above 300 in 1977 and 1996 (see supplemental table 16-1).

HIGH PERFORMANCE: Percentage of 17-year-old students scoring at or above 300 on the NAEP mathematics and science assessments: 1977–96



SOURCE: U.S. Department of Education, NCES. *National Assessment of Educational Progress, NAEP 1996 Trends in Academic Progress* (NCES 2000–499), 2000 (forthcoming).

FOR MORE INFORMATION:
Supplemental Note 6
Supplemental Table 16-1

High Performance in Mathematics and Science

Table 16-1 Percentage of 17-year-old students scoring at or above 300 on the NAEP mathematics and science assessments, by sex: 1977–96

Sex	1977	1978	1982	1986	1990	1992	1994	1996
					Mathematics			
Total	**—**	**51.5**	**48.5**	**51.7**	**56.1**	**59.1**	**58.6**	**60.1**
Male	-	55.1	51.9	54.6	57.6	60.5	60.2	62.7
Female	-	48.2	45.3	48.9	54.7	57.7	57.2	57.6
					Science			
Total	**41.7**	**—**	**37.3**	**41.3**	**43.3**	**46.6**	**47.5**	**48.4**
Male	48.8	-	45.2	48.8	48.2	50.9	52.9	53.1
Female	34.8	-	29.9	34.1	38.7	42.0	42.4	43.9

— Not available.

NOTE: See *Supplemental Note 6* for information on the National Assessment of Educational Progress (NAEP).

SOURCE: U.S. Department of Education, NCES. National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress* (NCES 2000–499), 2000 (forthcoming).

High Performance in Mathematics and Science

Table S16-1 Standard errors for the percentage of 17-year-old students scoring at or above 300 on the NAEP mathematics and science assessments, by sex: 1977–96

Sex	1977	1978	1982	1986	1990	1992	1994	1996
					Mathematics			
Total	**-**	**1.1**	**1.3**	**1.4**	**1.4**	**1.3**	**1.4**	**1.7**
Male	-	1.2	1.5	1.8	1.4	1.8	2.1	1.8
Female	-	1.3	1.4	1.7	1.8	1.6	1.4	2.2
					Science			
Total	**0.9**	**-**	**0.9**	**1.4**	**1.3**	**1.5**	**1.3**	**1.3**
Male	1.1	-	1.2	2.1	1.6	2.0	1.8	1.5
Female	1.0	-	1.2	1.5	1.7	1.7	1.8	1.7

— Not available.

SOURCE: U.S. Department of Education, NCES. National Assessment of Educational Progress, *NAEP 1996 Trends in Academic Progress* (NCES 2000–499), 2000 (forthcoming).